

Executive Summary

1. Introduction/Overview

1.1 Introduction

This Draft Environmental Impact Report (EIR) has been prepared by the California State Lands Commission (CSLC) in accordance with the California Environmental Quality Act (CEQA) to inform the public and to meet the needs of local, State, and federal permitting agencies to consider the Concord to Sacramento Pipeline Project proposed by Santa Fe Pacific Partners, LP (referred to in this document as SFPP or “the Applicant”). The project proposed by SFPP (the “Proposed Project”) is described briefly below, and in detail in Section B of this EIR. This EIR does not make a recommendation regarding the approval or denial of the project; it is purely informational in content.

The CSLC is the Lead Agency for CEQA compliance in evaluation of SFPP’s proposed Concord to Sacramento Pipeline Project, and has directed the preparation of this EIR. This EIR will be used by the CSLC, in conjunction with other information developed in the CSLC’s formal record, to act on SFPP’s application for a lease of State lands for construction and operation of the Proposed Project. Under CEQA requirements, the CSLC will determine the adequacy of the Final EIR and, if adequate, will certify the document as complying with CEQA. The CSLC will also act on SFPP’s application; in accordance with CEQA. If the CSLC approves a project that would have significant and unmitigable impacts, it must state its reasons in a “Statement of Overriding Considerations,” which would be included in the CSLC’s decision on the application.

This EIR evaluates and presents the environmental impacts that are expected to result from construction and operation of SFPP’s Proposed Project, and provides mitigation measures, which, if adopted by the CSLC or other responsible agencies, could avoid or minimize the significant environmental impacts identified. In accordance with CEQA requirements, this EIR also identifies alternatives to the Proposed Project, which could avoid or minimize significant environmental impacts associated with the project as proposed by SFPP (including the No Project Alternative), and evaluates the environmental impacts associated with these alternatives.

This EIR reflects input by government officials, other agencies, nongovernmental organizations and concerned members of the public during the EIR scoping period following the CSLC’s publication of the Notice of Preparation (NOP) of an EIR (mailed on February 1, 2002). During the scoping comment period, a public scoping meeting was held in Fairfield.

1.2 Overview of the Proposed Project

SFPP is proposing to construct and operate a new 20-inch petroleum pipeline to carry gasoline, diesel fuel, and jet fuel from the existing SFPP Concord Station in Contra Costa County to the existing SFPP Sacramento Station in the City of West Sacramento, California. The current capacity of the system is 152,000 barrels per day (BPD) with a current peak demand of 137,000 BPD. With a forecasted annual increase in demand of 2.5%, the existing capacity will be reached in 2006. To respond to this demand, the proposed 20-inch pipeline would have a capacity of 200,000 BPD.

The purpose of the new pipeline is to meet projected demand for petroleum products (including fuel for military installations) in the Sacramento, Roseville, Chico, and Reno areas by replacing SFPP's existing 36-year old, 14-inch pipeline between Concord and Sacramento. The existing pipeline is approximately 60 miles long and is located primarily within Union Pacific Railroad (UPRR) right-of-way (ROW). Upon completion of the Proposed Project, most of the existing pipeline would be decommissioned from further use in petroleum product service by SFPP. However, approximately 6,000 feet of the existing 14-inch line would continue to be used for the crossing of the Carquinez Strait until such time that a new 20-inch pipe can be installed using a single horizontal directional drill (HDD).

1.3 Need for the Proposed Project and Project Objectives

In its Application, SFPP states that the pipeline would provide the needed capacity to meet the growing demand for gasoline, diesel and jet fuel to Sacramento and beyond by replacing SFPP's existing 36-year old, 14-inch pipeline between Concord and Sacramento. From the terminus in West Sacramento, the petroleum products are transported through a network of existing pipelines to various distribution facilities that serve the product needs of Central and Northern California and Nevada. Current and projected estimates for the area indicate that by the year 2010, additional capacity totaling 21,000 barrels per day must be added to the system. The existing 14-inch pipeline cannot carry more than its estimated maximum capacity of 152,000 barrels per day.

SFPP has identified the following four objectives for the Concord to Sacramento Pipeline Project:

- Increase the ability of a common-carrier pipeline system to transport refined petroleum products from refineries and other sources in the San Francisco Bay Area to commercial and military markets in central California and northern Nevada.
- Minimize the need for tanker truck transportation of petroleum products from the Bay Area to markets in central California and northern Nevada.
- Minimize the number of jurisdictions affected by the project.
- Supply product to the Sacramento Airport via a future tie-in to the new pipeline by Wickland Oil Company.

It is also noted that SFPP intends to discontinue use of most of its existing 14-inch petroleum products pipeline between Concord and Sacramento when the new pipeline becomes operational. Because this decommissioning is a part of the Proposed Project, it is considered by the CSLC to be a project objective.

2. Description of Proposed Project and Alternatives

This section provides a summary description of the Concord to Sacramento Pipeline Project proposed by SFPP and the project alternatives. Section B of this EIR presents detailed descriptions of the Proposed Project and Alternatives.

2.1 Proposed Project

SFPP is proposing to construct and operate a new 20-inch petroleum pipeline from the existing SFPP Concord Station in Contra Costa County to the existing SFPP Sacramento Station in the City of West Sacramento, California (see Figure ES-1). The current capacity of the system is 152,000 BPD with a current peak demand of 137,000 BPD. With a forecasted annual increase in demand of 2.5%, the existing

Figure ES-1 Overview of Proposed Pipeline Route

capacity will be reached in 2006. To respond to this demand, the pipeline system would be approximately 70.7 miles long, would carry gasoline, diesel fuel, and jet fuel, and would have a capacity of 200,000 BPD. The 20-inch pipeline would be designed to operate at a maximum of 1,440 pounds per square inch (psi). When the new pipeline is operational, SFPP would decommission its existing 14-inch pipeline between the Concord and Sacramento Stations except for a 1.1-mile segment that would be used by the new pipeline to cross the Carquinez Strait.

General Pipeline Route Description. As illustrated in Figure ES-1, the pipeline route would begin at the SFPP Concord Station just outside of the City of Concord in Contra Costa County and travel northwest through industrial areas of the county and the City of Martinez. Analysis in the EIR is generally presented by segment for each of the seven segments shown on Figure ES-1.

At the south shore of the Carquinez Strait, the proposed pipeline would connect to SFPP's existing 14-inch pipeline to cross the Carquinez Strait.¹ The pipeline route in the city of Benicia would travel northeasterly in industrial areas largely in road ROWs. The pipeline route would leave the city of Benicia between MPs 8 and 9 and travel primarily through agricultural areas of Solano County. At approximately MP 19 the pipeline route would cross a portion of marshland and the Cordelia Slough. It would then enter the city of Fairfield and travel approximately one mile in an unincorporated industrial and agricultural area before entering Suisun City. In Suisun City the pipeline route traverses a residential area for less than a mile. The route would then travel through an industrial area in Fairfield near MPs 28 and 29. From MP 30 to MP 50 the pipeline route would travel through mostly agricultural lands in Solano County. Approximately 0.7 miles later, the pipeline would enter an unincorporated area of Yolo County and travel through an agricultural area. Near MP 65 the pipeline would enter the city of West Sacramento and travel largely in road ROWs through industrial areas until ending at the existing SFPP Sacramento station at MP 70.

In addition to the proposed 20-inch pipeline between Concord and West Sacramento, SFPP proposes to construct a new 12-inch diameter pipeline branch (approximately 0.8 miles long) to serve Wickland Oil Company (Wickland) to supply fuel to the Sacramento International Airport (SIA). This pipeline branch is shown on Figure ES-1 as Segment 7 and would connect to Wickland's 12-inch SIA pipeline via its metering station at a location north of West Capitol Avenue in West Sacramento.

Terminal Modifications. Upgrades to SFPP's existing Concord and Sacramento Stations would be required to connect and operate the new pipeline. These upgrades would occur within the existing facility boundaries and would include the installation of piping, fittings, valves, and other equipment that would be necessary to connect the new pipeline to the existing facilities.

2.2 Project Alternatives

An alternative pipeline route could replace a portion of the proposed route or the entire route. Alternative routes would not affect the ability of the Proposed Project to achieve the desired project objectives. Therefore, as required by CEQA, alternatives were considered in context of their ability to reduce the significant environmental impacts of the Proposed Project and their technical and regulatory feasibility.

¹ Use of SFPP existing 14-inch pipeline is part of the Proposed Project and is described in the EIR as the "Phase 1 Carquinez Strait Crossing." When technology for directional drilling improves sufficiently, SFPP will propose a single directional drill ("Phase 2"); this action is addressed briefly in this EIR but it will be considered in a subsequent CEQA document when SFPP formally proposes the new crossing.

Alternatives Evaluated in EIR

Existing Pipeline Right-of-Way (ROW) Alternative. The Existing Pipeline ROW Alternative would be a new 20-inch pipeline following the route of SFPP's existing pipeline from Concord to West Sacramento. It would be nearly entirely within the UPRR ROW. The route would begin in Concord and travel northward across the Carquinez Strait. It would enter Solano County, traveling through Benicia and paralleling the UPRR ROW for the entire route. It would continue along the UPRR ROW northeast across Suisun Marsh and pass through Fairfield. The Existing Pipeline ROW Alternative route would maintain its northeastern travel along the UPRR ROW through the City of Dixon, then enter Yolo County and travel in a more easterly direction to its final destination in West Sacramento, just west of the Sacramento River and the Sacramento County line. This alternative would be approximately 60 miles long.

Two mitigation segments are suggested for the Existing Pipeline ROW Alternative, one (EP-1) was suggested to reduce biological resources impacts and the other (EP-2) was suggested to reduce land use impacts. Mitigation Segment EP-1 would be an approximately 12-mile reroute that would parallel existing roads and a utility corridor to avoid the Suisun Marsh and Slough, which is the largest managed marsh in the San Francisco estuary, as well as the Grizzly Island Wildlife Area. Mitigation Segment EP-2 would be an approximately 7.5-mile reroute around the City of Davis to avoid potential constraints around the UPRR ROW and land use issues associated with routing the pipeline through the downtown area, which includes narrow corridors through residential neighborhoods.

No Project Alternative. If the Proposed Project is not built, a wide range of decisions could be made by both shippers (i.e., oil companies) and by SFPP (as the primary transporter of refined products in the region) about which destinations would have priority for receiving product via pipeline. SFPP would not be constructing its proposed new pipeline under the No Project scenario, and it is assumed that no other completely new pipeline would be built since none are currently proposed. Therefore, the scenario analyzed in this EIR is based primarily on anticipated modification of the existing pipeline, and secondarily, on the use of trucks and trains to respond to increased demand in the Sacramento area.

Alternatives Eliminated from Full Evaluation

Several potential alternatives were assessed for their ability to reasonably achieve the project objectives and reduce the significant environmental impacts of the Proposed Project. Also, their technical and regulatory feasibility was evaluated. Based on the screening criteria, three complete alternative routes that were studied by SFPP were eliminated from detailed EIR consideration because they did not clearly offer an opportunity to reduce or avoid impacts of the Proposed Project.

3. Areas of Controversy

This Draft EIR reflects written comments made by agencies from the time the CSLC published its Notice of Preparation (February 1, 2002) and in response to the CSLC's February 2003 Project Update. CEQA Guidelines Section 15123(b)(2) requires that the EIR summary identify areas of controversy known to the Lead Agency. While no specific areas of controversy have been identified, following is a list of comments and concerns identified by commenters during the scoping period.

- Review of safety features.
- Environmental safety posed by transporting petroleum products by pipeline, versus transporting the product by tanker truck, train, or ship.
- Direct, indirect, and cumulative project-related impacts on biological resources.

- Effects to paleontological resources.
- Transportation/traffic impacts and damage to roads.
- Socioeconomic impact on businesses along the proposed alignment during construction.
- Potential conflict with proposed development plans.
- Significant air quality impacts during project construction.
- Impact to agricultural lands.
- Impacts to cultural resources.
- Exposure of people, wildlife, and natural resources to emergency/upset conditions due to pipeline rupture, explosion, and growth-inducing impacts.
- Route crosses through Putah Creek and the Primary Zone of the Legal Delta at the Yolo Bypass.

Each of these concerns is addressed in the EIR, primarily in Section D.

4. Environmental Impacts and Mitigation Measures

This section summarizes the environmental setting, impacts, and mitigation measures that are described in detail in Section D of this EIR. Sections are presented below in the same order in which they appear in Section D.

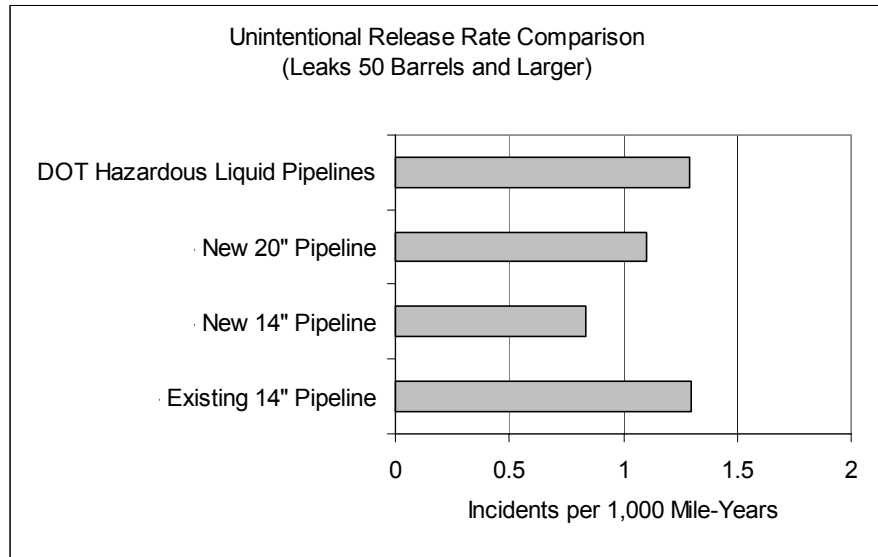
4.1 Pipeline Safety & Risk of Accidents

The major impacts associated with the Proposed Project are related to the potential for unintentional releases, injuries, and fatalities during pipeline operation. The magnitude of the major impacts associated with both the Proposed Project and the Existing Pipeline ROW Alternative would likely be less than those of the No Project Alternative.

The pipeline safety section presents data on anticipated frequencies and sizes of pipeline accidents; this data is used in other issue area analyses to determine significance of pipeline accidents on resources in the project area. The anticipated frequency of unintentional releases from a given length of the existing 14-inch pipe (which would continue to be used in the No Project Alternative) is roughly 50% higher than that for the proposed new pipeline construction — 4.48 versus 2.88 releases per 1,000 mile-years. As a result, a significantly higher total number of unintentional releases are expected from the No Project Alternative (due to use of pipe constructed in 1967) as compared to either the Proposed Project or the Existing Pipeline ROW Alternative route (both employing new pipe). The anticipated release volumes were adjusted proportionally to the cross sectional area of the pipe being analyzed to account for the larger volumes and higher possible flow rates associated with the larger diameter pipe. As a result, even though the existing 14-inch diameter pipe has an anticipated frequency of leaks roughly 50% greater than the proposed new 20-inch pipe, the anticipated number of very large leaks from the existing, smaller diameter pipe is less than from the Proposed Project or Existing Pipeline ROW Alternative route. But the anticipated number of small leaks is anticipated to be greater from the existing 14-inch pipe.

The anticipated frequencies and volume distributions of unintentional releases, injuries, and fatalities were developed primarily using the 1981 through 1990 data collected for California's regulated interstate and intrastate hazardous liquid pipelines. A review of more recent national and international data available has shown that the California data is still representative of accident frequencies. Figure ES-2 shows a comparison of the anticipated frequency of unintentional releases that meet the historic Department of Transportation spill volume reporting criteria (50 barrels and larger).

Figure ES-2. Unintentional Release Rate Comparison (50 Barrels and Larger)



Following is a summary of key findings for pipeline safety and risk of accident.

- Unintentional Releases from No Project Alternative versus Proposed Project or Existing Pipeline ROW Alternatives.** The Proposed Project and the alternatives, including the No Project Alternative, would result in significant and unavoidable impacts. The No Project Alternative would result in the greatest number of unintentional releases. Excluding the additional impacts of rail and truck transportation, the total number of unintentional releases in the No Project scenario would be 36% greater than the Proposed Project and 56% greater than the Existing Pipeline ROW Alternative. The No Project Alternative would result in a slightly lower number of very large releases, due primarily to the smaller cross sectional area of the pipe (14-inch versus 20-inch diameter), reduced pipeline shipping rates, and the limited volume of rail and truck containers.
- Injuries and Fatalities Resulting from No Project Alternative versus Proposed Project or Existing Pipeline ROW Alternative.** The Proposed Project and the alternatives would result in significant and unavoidable impacts to human life, even with comprehensive mitigation because transport of petroleum products is an inherently hazardous operation. If the existing pipeline were to continue to be operated at current capacity, without modifications to increase its throughput, the anticipated number of injuries and fatalities would be similar for all three scenarios (Proposed Project, Existing Pipeline ROW Alternative, and the No Project Alternative). However, should truck or rail transportation be used to meet demands for additional volumes of refined petroleum products, the anticipated number of injuries and fatalities associated with the No Project Alternative would increase, possibly dramatically. As a result, the impacts to human life are expected to be greater from the No Project Alternative, than from either the Proposed Project or the Existing Pipeline ROW Alternative.
- Proposed Project versus Existing Pipeline ROW Alternative.** The Proposed Project route is 14% longer than the Existing Pipeline ROW Alternative route. Since the anticipated frequency of unintentional releases per given length of line is the same for each alignment, the proposed route would result in a somewhat higher number of anticipated releases, injuries, and fatalities (proportional to the variation in line length). However, the proposed route has generally better access for responding to an emergency because the Existing Pipeline ROW Alternative follows railroad ROW and passes through some remote areas. In short, the Proposed Project route has a slightly higher anticipated number of releases; but would result in somewhat lower consequences than the Existing Pipeline ROW Alternative route. As a result, the risks posed by the Proposed Project and the Existing Pipeline ROW Alternative route would be similar.

Nine comprehensive mitigation measures are recommended to reduce impacts from construction, operation, and abandonment. These measures, if implemented, are expected to reduce the potential project safety risks. However, residual impacts are still considered to be significant, because there remains a small risk that a pipeline accident could cause injuries or fatalities to the public.

4.2 Air Quality

The Proposed Project would be built and operated in the Bay Area and Sacramento Valley air basins. The division of the two air basins occurs in Solano County, east of Fairfield. The air quality in this region does not currently attain the ambient air quality standards for ozone and PM₁₀. Because the proposed route would travel through populated areas, there is a possibility that the project could cause a nuisance during either construction or operation.

Air quality can be adversely affected during either short-term construction activities or operational activities over the life of the project. During construction, emissions of airborne dust and exhaust from heavy equipment and mobile sources related to worker and material transport would occur. Although air quality impacts from construction would be short-term (for only one ozone season), the dust emissions and equipment exhaust could substantially contribute to existing violations of the ozone and PM₁₀ standards. Three mitigation measures are recommended: one for reducing heavy equipment emissions, one for reducing dust emissions and potential nuisance impacts, and one for reducing emissions from the on-highway mobile sources used to transport personnel, materials, and equipment to and from each work spread. With the recommended measures, impacts to the Bay Area air basin would be reduced to less than significant levels. However, a significant impact would remain for the Sacramento Valley air basin because the emissions during the eight-month construction period would still substantially contribute to the existing violations of the standards.

Emissions during pipeline operation would occur from components that may leak to the atmosphere (e.g., storage tanks, pumps, valves, seals). There would also be emissions associated with activities to support operation (e.g., power produced for pumping, and vehicles used in inspections and maintenance). The quantity of these emissions would be minimal, and they would not substantially contribute to existing violations of the standards. Emissions of airborne toxics and odors would also be minimal, and emissions from accidents would only occur with a very low probability. Each of the operational impacts would be adverse, but not significant.

Alternatives to the Proposed Project provide the opportunity to cause less-intense construction impacts. For the Existing Pipeline ROW Alternative, however, the construction impacts could be similar to those of the Proposed Project (potentially significant) and similar mitigation would be necessary. The No Project Alternative could avoid the project's short-term significant construction impacts, especially if existing pipelines were not greatly expanded. This could result in increased trucking of product that would likely grow to a level that is significant. The air quality impact from increased trucking would likely be significant, and it would not be mitigable. If SFPP's existing pipelines were expanded under the No Project Alternative, then the construction impacts would be similar to those of the Proposed Project (creating potentially significant impacts), depending on the extent of construction.

4.3 Biological Resources

Vegetation and Wetlands. The approximately 70-mile proposed pipeline route would cross areas composed of non-sensitive upland vegetation, including cultivated fields, annual grassland, developed areas, and ruderal areas. The pipeline route would cross several small sensitive upland areas, including oak

woodland and riparian forest, as well as many small wetlands, including freshwater marsh, brackish marsh, seasonal alkali marsh, salt marsh, vernal pool and riparian scrub. Studies identified the potential for 32 special status plant species to occur in the vicinity of the proposed pipeline project; however, surveys identified the presence of only nine special status plant species in close proximity to the project area.

Activities related to the construction, operation, and maintenance of the Proposed Project may cause direct and indirect impacts to sensitive vegetation types and to four special status plant species. These impacts would result from: (1) direct removal or damage during construction, (2) overland travel during pipeline monitoring or pipeline repair; (3) damage due to erosion, sedimentation or hazardous substances, (4) disturbances that facilitate weed invasion; and (5) alteration of surface or groundwater hydrology. All of these impacts are considered potentially significant, but they are mitigable to levels that are less than significant with implementation of six recommended mitigation measures to reduce construction impacts to vegetation and wetlands. These mitigation measures generally include impact avoidance during construction, operation, and maintenance. Field identification, mapping, in some cases fencing, of sensitive resources will facilitate avoidance. For sensitive vegetation types, if avoidance is not possible, appropriate regulatory agencies will be consulted and mitigation/restoration/replacement procedures will be developed for approval by the agency.

Direct and indirect spill impacts to special status plants and sensitive upland and wetland vegetation would also be potentially significant and mitigation is recommended. Implementation of mitigation measures could reduce impacts of relatively smaller spills to less than significant, but impacts of large spills where occurrence of special status plants exist or where restoration is difficult, are considered significant and unmitigable.

Unless Mitigation Segment EP-1 (avoiding Suisun Marsh and Slough) were implemented, the Proposed Project would be preferred over the Existing Pipeline ROW Alternative because it would traverse a smaller amount of sensitive vegetation types, especially salt marsh, vernal pool and riparian forest and potential habitat for special status plants. The Proposed Project is preferred over the No Project Alternative because it has less potential for spills and fewer potential impacts to special status plants and sensitive vegetation.

Wildlife. Construction of the Proposed Project would result in temporary or permanent impacts to wildlife species and their habitats. The following impacts to wildlife were identified:

- Removal of wildlife habitat.
- Direct wildlife mortality.
- Wildlife disturbance from increased human presence and access.
- Habitat removal or disturbance of special status species.

There are 15 special status terrestrial wildlife species that are either known to occur or have a high probability of occurring within or near the Proposed Project ROW.

Impacts to wildlife resources are considered adverse or potentially significant, but recommended mitigation would reduce all impacts to less than significant levels. Although much of the proposed pipeline route passes through agricultural areas and disturbed grasslands with marginal habitat value, there are portions of the route that cross sensitive habitats and areas that potentially support special status species that may be affected by construction of the Proposed Project. Several federal and State-listed or candidate species use seasonal and tidal wetlands, grasslands, oak woodland, and riparian and other aquatic

communities that occur within or near the Proposed Project for foraging and/or breeding (California clapper rail, California red-legged frog, vernal pool branchiopods).

Eleven mitigation measures are recommended to reduce impacts to wildlife, including requirements for pre-construction wildlife surveys, use of exclusion flagging or fencing to mark and protect sensitive wildlife habitat, implementing a *Worker Environmental Awareness Program* for construction crews, and limiting the extent of construction and using boring or directional drilling to avoid sensitive aquatic resources. Other mitigation measures require specific protection for special status wildlife species and surveys for nesting raptors.

The Existing Pipeline ROW Alternative would likely have greater impacts to wildlife species and their habitats because it would pass through areas of the Suisun Marsh Complex, which is known to support sensitive habitats and a wide variety of special status wildlife species. The Existing Pipeline ROW Alternative with Mitigation Segment EP-1 would avoid the Suisun Marsh and would have impacts similar to the Proposed Project route. The No Project Alternative, however, has the potential to cause more significant impacts to wildlife compared to the Proposed Project due to its higher spill frequency potential, the fact that it crosses more sensitive habitat, and that there is no authority to implement mitigation measures.

Marine Biology. The Proposed Project would cross northern San Francisco Bay by connecting to an existing pipeline at the eastern end of Carquinez Strait. San Francisco Estuary, the largest coastal embayment on the Pacific Coast of the United States, supports a unique aquatic ecosystem that has been profoundly altered by human interference. Tidal waterbodies in the vicinity of the proposed pipeline route include Carquinez Strait, Suisun Bay, and sloughs adjacent to Suisun Bay. The aquatic ecosystem in these areas is strongly influenced by freshwater flows from the Sacramento–San Joaquin River system. Anadromous fish species that spend their adult lives in the open ocean and come into fresh water to spawn pass through the project area on their way to spawning grounds in the Sacramento–San Joaquin River systems. Native anadromous species include Chinook salmon, steelhead trout, river lamprey, and both green and white sturgeon. Introduced anadromous species include striped bass and American shad. Seven sensitive anadromous fish species occur in the area, as well as three sensitive species of resident fish. The project area thus is important migratory habitat for sensitive anadromous species on their way to their spawning rivers, and the sloughs and shallow water areas serve as a nursery grounds for the young of these species during their migrations out to the ocean.

The only tidal waterbody that would be affected directly by Proposed Project construction is Pacheco Creek, which is proposed to be crossed by open cut at its upstream end. Because sensitive fish species, including Chinook salmon, Sacramento splittail, and possibly Delta smelt and steelhead, enter Pacheco Creek from Suisun Bay, mitigation is proposed to ensure a bored or drilled crossing of this creek. This method of creek crossing would not affect directly aquatic habitat but could result in degradation of habitat if sediment were eroded into the creek or toxic substances were introduced into the creek. These impacts are potentially significant because they would degrade habitat used by sensitive fish species, and mitigation is recommended to reduce impacts to less than significant levels.

Although the probability is low that a pipeline accident would cause a release into tidal waters as a result of the Proposed Project, such a release would be a significant impact because it would degrade the habitat of sensitive fish species. A small or medium oil spill (less than 50 barrels) would probably be mitigable to less than significant levels. However, it is unlikely that a large spill could be cleaned up or contained before a substantial amount of aquatic habitat was contacted by petroleum product.

The Existing Pipeline ROW Alternative would cross similar tidal waterbodies as the Proposed Project (e.g., Pacheco Creek mentioned above), therefore construction effects and spill potential would be similar. The No Project Alternative would be unlikely to have construction impacts affecting marine resources. Therefore, potential degradation of tidal habitats from the introduction of contaminants or from increased turbidity due to disturbance of sediments, erosion or drilling mud release would not occur. However, under the No Project Alternative the existing pipeline would continue to be used and there would be a greater potential for leaks or spills of petroleum products into aquatic and marine habitats. Therefore, overall, the Proposed Project is preferred.

4.4 Cultural Resources

The cultural resources section identifies archaeological and historic properties that are present and could be affected by the approximately 60-mile Existing Pipeline ROW Alternative and the approximately 70-mile Proposed Project. The review was based on reports compiled by William Self Associates, Inc., JRP Historical Consulting, and URS, using materials from both archival data searches and field inventories.

Subsurface disturbance during pipeline construction would include preparation for construction lay down and stockpile areas, work areas, access roads and excavations associated with pipeline removal and pipe replacement or the placement of new pipe. Pipeline installation would require trenching and the excavation of bore pits for either jack-and-bore or horizontal directional drilling for pipeline placement under waterways, highways, and other designated areas. These ground-disturbing construction activities have the potential to directly impact cultural resources by disturbing both surface and subsurface soils. Such disturbance could result in the loss of integrity of cultural deposits and possible loss of information, or the alteration of a site setting.

For the Proposed Project, there is a low to moderate potential for the discovery of unknown buried cultural resources during pipeline construction based on the archival research and field data. No recorded California Register of Historical Resources eligible resources have been identified in or adjacent to the Area of Potential Effects for the Proposed Project. However, it is possible that unexpected significant cultural resources could be found during construction.

For the Existing Pipeline ROW Alternative, impacts would be similar to those for the Proposed Project. Prior literature reviews suggest a relatively low archaeological sensitivity with the exception of the area north of Elmira to the Yolo Bypass covering approximately 12 linear miles.

For cultural resources, the preferred method of mitigation is for project construction to avoid areas where significant cultural resources are present. However, if avoidance is not possible, specific protective measures can be implemented to reduce the potential adverse impacts on cultural resources to a less than significant level. Five mitigation measures are recommended, which, if implemented, would reduce all the potential impacts of the project to a less than significant levels. These measures are applicable to both the Proposed Project and the Existing Pipeline ROW Alternative. The No Project Alternative would use the existing pipeline and would be primarily within railroad ROW, minimizing the potential for impacts to cultural resources. Emergency repair and response to more frequent accidents could potentially result in impacts to unknown cultural resources as a result of additional construction and excavation within the present alignment and the absence of mitigation measures.

4.5 Environmental Contamination and Hazardous Materials

The proposed Concord-Sacramento Pipeline Project and the Existing Pipeline ROW Alternative traverse a variety of land uses including residential housing, commercial uses, oil distribution and storage, industrial activities, and agricultural. Existing and past land use activities are used as potential indicators of hazardous material storage and use.

The principal environmental impacts involving hazardous waste are the excavation and handling of contaminated soil resulting in exposure of workers and the general public to contaminants. A wide variety of contaminants including petroleum hydrocarbons, solvents, polynuclear aromatic compounds, heavy metals, pesticides, and herbicides may be present along the pipeline route. Active or closed landfill sites located adjacent to or near the proposed pipeline alignment would potentially impact the project from methane or other toxic gases. Hazardous materials in the construction area may require special handling as hazardous waste and could create an exposure risk to workers and the general public during excavation and transport. Contaminated soil exceeding regulatory limits for trench backfilling would require on-site treatment or transport to off-site processing facilities; contaminated soil removed from the construction area must be transported according to State and federal regulations and be replaced by import soil approved for backfilling. Similar issues pertain to contaminated groundwater, which may actually transport contamination from nearby sources to the Proposed Project alignment. Shallow groundwater and locally contaminated groundwater is anticipated at proposed excavation depth throughout many areas of the proposed route and alternative segments. The presence of environmental contamination along the pipeline alignments represents significant but mitigable impacts.

Six mitigation measures are recommended to address potential environmental contamination that may be found along the Proposed Project and alternatives route. Implementation of these mitigation measures could reduce all impacts to less than significant levels.

Most segments of the Proposed Project and the Existing Pipeline ROW Alternative have a comparable potential to be impacted by the presence of contaminated soil. Spills and leaks along the existing pipeline near Elmira and the existing pipeline route through commercial areas of Davis represent a slightly greater potential for impacts from contaminated soil than the proposed route, which travels through agricultural areas and past two landfills. Therefore, the proposed route is marginally preferred to the Existing Pipeline ROW Alternative. Under the No Project Alternative, the Proposed Project would not be constructed, and the beneficial impact of cleanup of contaminated sites would not occur. The two existing pipelines would require some repair and upgrades that would likely occur in areas of past leaks, so this work could encounter contaminated soil or groundwater. While the Applicant would likely employ standard cleanup measures in this situation, it is possible that without additional mitigation, impacts would remain significant. The existing pipelines have a greater potential for future leaks than a new pipeline. Therefore, overall the Proposed Project is preferred over the No Project Alternative.

4.6 Geology, Soils, and Paleontology

The Proposed Project alignment traverses foothills, a major water crossing, marsh, flat fields, and flood plain between Concord and West Sacramento. The surface geologic units along the proposed route are primarily poorly consolidated alluvium, stream and river deposits, estuarine deposits of bay mud, and sandstone and shale of Cretaceous and Tertiary age. An active fault system occurs along the western margin of the project, crossing three active faults, with one potentially active fault crossing present in the west-central portion of the project.

All alignment alternatives intersect active faults. The main fault hazard is fault rupture along the Concord/Green Valley fault, which is crossed by the Existing Pipeline ROW Alternative and by the Proposed Project route on both sides of the Carquinez Strait. Additional fault-related hazards are extreme ground shaking, liquefaction of underlying soils, and lateral spreading of soil near water crossings. Rupture could occur if a landslide mass moves across the pipeline; landslides intersect the proposed pipeline route west of Interstate 680. Unfavorable soil conditions may impact the alternatives through corrosion or shrink-swell action. Unique and important paleontological resources may exist in several units crossed by the alternatives; the resources would be impacted by new excavation activity related to pipeline construction.

The presence of active faults in the project area creates a significant impact. Mitigation recommends consideration of special pipeline designs at fault crossings that incorporate an appropriate crossing angle and special trench and pipe designs; these measures mitigate the impact somewhat, but not completely. Pipeline rupture at active fault crossings is still likely in the event of a Maximum Capable Earthquake. Another potential rupture mechanism is that of landslides. Geotechnical studies of the individual landslides would aid in trench and pipeline design so as to withstand a landslide at the site. Unfavorable soil conditions are routinely mitigated for similar projects. Geotechnical reports required by recommended mitigation measures will aid in the design of trench and pipeline design.

Fossils of land-dwelling animals and plants are significant non-renewable resources. Fossils may be disturbed or destroyed by excavation activities along the alternative routes. The impact of construction on paleontological resources is mitigable through implementation of a paleontological monitoring program designed and managed by a qualified paleontologist. Through the mitigation, fossils that may have remained undiscovered can be collected, described, and deposited in a museum.

The active fault crossings create the potential for pipeline rupture, an unavoidable significant impact. The potential for damage to the pipeline during fault rupture can be reduced with implementation of recommended mitigation, but not completely eliminated.

Many of the same impacts that are identified for the Proposed Project would also occur for the Existing Pipeline ROW Alternative, including excavation failure, seismic hazards, slope stability, and problematic soils; therefore, these two routes are considered to be similar. Under the No Project Alternative, existing levels of seismic risk would remain, because the 36-year-old existing pipeline crosses several active faults. In the absence of the authority to implement mitigation measures, the impacts of the active fault crossings would be significant.

4.7 Hydrology and Water Quality

A major portion of the Proposed Project is located in the Sacramento River Basin, and would cross 64 waterbodies, including the Carquinez Strait, the South Fork of Putah Creek, and the Yolo Bypass. The Proposed Project would also traverse a portion of the Suisun Bay region of the San Francisco Bay. The Sacramento and San Joaquin Rivers deliver the major source of freshwater for the entire San Francisco Bay, via the eastern portion of Suisun Bay. Water quality within the Sacramento Valley is primarily influenced by local land uses including but not limited to urban and agricultural operations.

A portion of the Proposed Project would extend through the Sacramento Valley Groundwater Basin, which represents the largest groundwater basin in northern California. The Sacramento River Basin and San Joaquin River Basin Plans provide objectives and beneficial uses for groundwater quality. The listed water quality objectives include thresholds for the following: bacteria, organic and inorganic chemical constituents, radioactivity, and tastes and odors.

Groundwater throughout the entire pipeline length is shallow. Although there are local variations, the groundwater surface is at approximately sea level throughout most of the area traversed by the pipeline. Since the ground surface at the location of the pipeline is generally less than 100 feet above sea level, the groundwater is generally less than 100 feet below the pipeline. From approximately Milepost 16 near Cordelia to the pipeline terminus at Sacramento (approximately 75 percent of the pipeline route), ground elevations are generally less than 25 feet, meaning the distance between the pipeline and groundwater is approximately 20 feet.

The impact analysis identifies six construction impacts and seven mitigation measures to reduce these impacts to less than significant levels. Four impacts related to pipeline operation or accidents are identified, and six additional mitigation measures are recommended.

The most severe impact to surface water would be contamination from accidental rupture of the pipeline during operation or maintenance, or from any other cause which results in pipeline product entering surface water. A large product spill potentially resulting in toxic product component concentrations in surface water and reaching a regional waterway is expected to occur at least once during the lifetime of the pipeline, with potential to affect sensitive surface water resources such as the Suisun Marsh. Therefore, this impact is classified as significant.

Similarly, groundwater could become contaminated from release of product from a pipeline accident. Drinking water could be affected if contaminants released in groundwater migrated to a well used for municipal or private drinking water purposes. This impact is potentially significant, and mitigation measures are recommended to reduce the severity of this impact. However, since large product spills potentially resulting in discharge of product to groundwater are expected to occur at least once during the lifetime of the pipeline, this impact is classified as significant.

Although for the Existing Pipeline ROW Alternative the impacts could be mitigated to the same levels of significance as for the Proposed Project, this route is less desirable as a result of the Suisun Marsh crossing. However, implementation of Mitigation Segment EP-1 would avoid the most sensitive marsh areas. Under the No Project Alternative, construction impacts would be less in magnitude than for the Proposed Project, but impacts would be potentially significant in the absence of mitigation. Since the existing pipeline is older, burial depths at stream crossings may be shallow and it is possible that it could become exposed by stream action, resulting in a risk to pipeline integrity. There is also a higher risk of accident in older pipelines and with truck and train transportation. Overall, the magnitude of impacts would likely be greater under the No Project Alternative than for the Proposed Project.

4.8 Land Use, Recreation, and Agriculture

The proposed pipeline route traverses the Cities of Martinez, Benicia, Fairfield, Suisun City, West Sacramento, and unincorporated county lands in Contra Costa, Solano, and Yolo Counties. The area along the project route includes open space and agricultural lands, as well as residential and industrial areas. The pipeline would be located primarily within the street ROW of various transportation corridors in those cities and within railroad and private ROWs and transmission corridors along the less developed segments of the route.

Two land use impacts of the Proposed Project are construction-related; while they are potentially significant, they are mitigable to less than significant levels. These include equipment noise, dust and air emissions, access to and from development along the construction route to residents, employees, shoppers, schools, parks, community facilities, and particularly emergency vehicles. Construction impacts

also include effects on agricultural land. Land use impacts of pipeline operation would be felt infrequently, in that they would be related to repair and maintenance activities and as a result of pipeline accidents.

Five mitigation measures are recommended to reduce potentially significant construction impacts to less than significant levels. The measures would require SFPP to provide advanced notice to property owners, establish a toll-free telephone number for public questions and complaints, replace topsoil on agricultural lands, compensate farmers for loss of income, provide advance notice of restricted access to public facilities, and limit construction hours near schools. Residual impacts of construction activities would be less than significant. However, because a pipeline accident could contaminate land and presents a small likelihood of injury and fatality to the public, this impact is determined to be significant and unmitigable.

Land uses along the Existing Pipeline ROW Alternative are generally similar to those of the Proposed Project, and include industrial, agricultural, and residential areas. Because this alternative route primarily would be within the UPRR ROW, it would affect much less agricultural land than the Proposed Project, and would have less impact on roadways and access to adjacent land uses. The Existing Pipeline ROW Alternative would have a similar risk of a pipeline accident, and would also pass through more populated areas of Suisun City, Fairfield, Dixon, Elmira, Davis, and West Sacramento. The No Project Alternative would eliminate most of the short-term construction impacts associated with the Proposed Project. However, it would result in continued use of older pipelines that have a greater likelihood of accidents. In addition, increased use of trucks and trains would cause long-term greater traffic, noise, and air quality impacts that would affect land uses along the highway and railroad routes. Therefore, overall the Proposed Project is preferred for land use.

4.9 Noise

The Proposed Project would traverse numerous communities with a range of land uses including quiet agricultural and open areas and busy suburban areas. Throughout the communities are noise sensitive areas occupied by residences, schools, religious facilities, hospitals, and parks. Depending on the local jurisdiction, various standards and ordinances apply. The noise limitations vary, but they are most stringent in the dense residential and commercial cities.

Pipeline construction, operation and maintenance, accidents, and abandonment would each cause impacts to the noise environment. Construction activities could result in peak noise levels along the mainline spread of approximately 89 dBA at 100 feet. Although other work spreads and staging areas would create less noise, construction would cause significant impacts to sensitive residential receptors and other noise sensitive areas near the pipeline route, staging areas, and access roads. Mitigation measures to protect sensitive land uses would partially address disruptive noise during construction. However these measures would not, by themselves, ensure compliance with local standards or ordinances. The noise analysis recommends a mitigation measure to further reduce the impact to less than significant levels. Noise from procedures associated with operation of the Proposed Project (including inspections and maintenance) would occasionally occur along the pipeline route throughout the life of the project. Because this operational noise would occur only intermittently, at few locations along the route, the impact would be less than significant. The project would also involve changes to the equipment at the Concord Station. Depending on the design of the new pumping and power systems, adverse noise levels could occur at noise-sensitive areas in Concord. The noise analysis recommends one mitigation measure to reduce this impact to less than significant levels.

Alternatives to the Proposed Project would cause similar types of noise impacts. The Existing Pipeline ROW Alternative would encounter many of the same local jurisdictions, with similar surrounding noise sensitive areas. Mitigation measures for the project's noise impacts would also be applicable to the Existing Pipeline ROW Alternative. The No Project Alternative would involve minor pipeline construction activities that could cause similar temporary noise impacts during the work. Increased tanker truck and train traffic would increase noise levels along major transportation corridors, introducing an operational noise impact that would not occur with the Proposed Project.

4.10 Public Services and Utilities

The Proposed Project, Existing Pipeline ROW Alternative, and No Project Alternative affect the three counties that the existing and proposed pipeline corridors traverse: Contra Costa, Solano, and Yolo Counties. A variety of local and regional purveyors in this area provide and maintain utility and service system facilities associated with electricity, water, stormwater and wastewater, solid waste, communications, and natural gas. Public utilities such as these run parallel to, or cross, most of the ROW of the Proposed Project pipeline route in the form of water mains, sewer pipes, storm drains, power lines, gas mains, telephone lines, and other petroleum product pipelines. Utility companies post signs along the corridors that they use. Also, Underground Service Alert (also known as Dig Alert), a non-profit organization supported by utility firms, provides specific information on the location of underground utilities to contractors shortly prior to construction after preparation of the final pipeline designs.

The two types of impacts on utilities and service systems identified in this section can be divided into system disruption impacts, and project-required utility impacts. Service disruption impacts could occur during construction or operational maintenance when either a known utility must be disconnected to allow installation or repair of the proposed pipeline and then reconnected. These service disruptions could temporarily hinder activities in the surrounding area for short periods, and would be less than significant. Accidental damage to a nearby utility or service system due to construction or maintenance activities or a pipeline spill collocation accident could also cause service disruption. These impacts to service disruption are considered significant, but mitigable through the implementation of a recommended mitigation measure to protect underground utilities.

Project-required utility impacts could occur when the project generates more waste or requires more water than the capacities of local facilities can accommodate. The disposal and energy demands are reasonable relative to the capacities of the landfills and energy providers and project impacts would be minor and considered adverse, but not significant. The water requirements of the project could unduly burden the water supply of local water providers, but would be less than significant with implementation of mitigation requiring coordination with water districts.

In general, project-required utility demands would be less for the Existing Pipeline ROW Alternative than for the Proposed Pipeline because of the shorter route and resulting reduction in construction. The No Project Alternative would require some new construction to reinforce the existing pipeline system, but much less than that required for the new pipeline. As a result, it would generate much less disruption of utility services and place less demand on service providers. The risk of an accident and major spill from the older existing pipeline and these other petroleum product transportation modes would be greater than that for the Proposed Project.

4.11 Transportation and Traffic

The roadway network that could potentially be affected by the Proposed Project includes streets and highways that experience traffic volumes from about 100 thousands of vehicle trips per day. The agencies that have jurisdiction over the subject roadways are Caltrans, the Counties of Contra Costa and Solano, and the Cities of Benicia, Fairfield, Suisun, and West Sacramento. Burlington Northern Santa Fe Railroad and the Union Pacific Railroad own railroads in the project area. Public transportation service along the proposed pipeline route includes bus and rail transit service offered by Contra Costa Transit Authority (County Connection), Benicia Transit, Fairfield/Suisun Transit, Yolo Bus, UC Davis Unitrans, and Amtrak.

Construction within or adjacent to roadways would result in short-term disruption to traffic and transit services. Seven impacts are identified, including blocked traffic lanes, restricted access to residences, disruption of pedestrian traffic, and blockage of emergency vehicle travel. Ten mitigation measures are proposed to reduce or minimize potential construction impacts on traffic and transportation. These measures require development of Traffic Control Plans, minimizing lane closures and access restrictions, construction at night to reduce traffic impacts where residences are not affected, coordination with businesses and emergency service providers, provision of alternative bicycle and pedestrian routes, and review of staging areas. In addition, measures require repair of damaged road surfaces and coordination with rail and transit operators. Implementation of these mitigation measures would result in no significant residual impacts.

In the event of a pipeline rupture or leak, response activities could affect rail operations, highway traffic, pedestrian circulation, and transit activity. The potential transportation impacts of a pipeline accident would be mitigable to levels that are less than significant with implementation of the same measures proposed for construction.

With the exception of impacts to railroads, the types of impacts and mitigation measures associated with the Existing Pipeline ROW Alternative would be essentially the same as those that would occur under the Proposed Project. However, there would be fewer road encroachments under the Existing Pipeline ROW Alternative because of the use of UPRR ROW. Therefore, the Existing Pipeline ROW Alternative would be preferred over the Proposed Project with regard to transportation and traffic. Under the No Project Alternative, some of the construction activities could temporarily block traffic causing potentially significant impacts. In addition, the No Project Alternative scenario may include an increase in tanker truck and/or train traffic in the region, and accidental spills on road ROWs that would require temporary lane closures for cleanup would be more likely to occur.

4.12 Commercial Fisheries

The Proposed Project pipeline traverses the western portion of the San Francisco Bay estuary and the northern portion of the Sacramento–San Joaquin River Delta. Major fisheries in the Strait and Suisun Bay include Pacific salmon, sturgeon, shrimp, striped bass, a host of recreational fisheries, and about 15 marinas, piers, and public recreation areas. The Delta is home to several game fish including catfish, sturgeon, steelhead, striped bass, large mouth (black) bass, American shad, Chinook salmon, crappie, bluegill, and carp. Fishing from boats occurs throughout the Delta navigable waterways. Fishing along the banks of Delta waterways occurs along much of the 1,100 miles of shoreline. The area is served by about 50 public and private marinas, boat launches, and fishing access points.

Proposed pipeline construction impacts from either the Proposed Project or the Existing Pipeline ROW Alternative include potential effects on fishing access, fisheries habitat disturbance, and fuel spill and drill muds spills and accidents. During operation, significant impacts would result from pipeline product spills, if a spill actually occurs.

Mitigation for construction of the Proposed Project includes providing notice prior to construction to alert fishing interests. To address potential expected habitat disturbance, reclamation plans, pre- and post-construction surveys, contingency plans for possible leaks from drill mud pits, and measures to reduce impacts from open cut crossings are recommended. To limit impacts of possible construction accidents (fuel, drill muds, spills, and disposal of materials into streambeds) response plans, measures to reduce long and short-term damage (should spills occur) and pre- and post-inventory of construction materials are suggested. Residual impacts range from less than significant for construction impacts, to potentially significant for impacts from possible spills and accidents.

Construction impacts and the potential for a pipeline accident along the Existing Pipeline ROW Alternative would be the same as that on the Proposed Project. Construction impacts from No Project Alternative would be minor, but operational impacts are expected to be potentially significant and more severe than spill impacts from the Proposed Project or Existing Pipeline ROW Alternative, as the risk of spills for the older pipelines is higher.

4.13 Environmental Justice

The study area for the Proposed Project consists of northern Contra Costa County, western Sacramento County, eastern Solano County, and southeastern Yolo County. The geographic unit of analysis used is the census tract block group. There are approximately 1,700 census tract block groups in the four-county study area. Approximately 67 block groups have at least some portion of their area within one-half mile (on either side) of the centerline of the Proposed Project route. All of the block groups in the study area have been classified as low-, medium-, and high-level minority block groups using minority percentage and low-, medium-, and high-income block groups using annual per-capita income. Block groups identified as high-minority or low-income were determined to have the potential to be disproportionately affected by the Proposed Project if more high-minority and low-income block groups were in the vicinity of the pipeline corridor than block groups of other categories.

More low-income block groups along the Proposed Project route were identified than medium- or high-income block groups, but there were the same or fewer high-level minority block groups along the pipeline corridor as low- and medium-level minority block groups. The pipeline route follows a path through areas that can generally be classified as low-density industrial, low-density urban/suburban, and low-density agricultural. The Proposed Project would contribute an incremental increase to the industrialization of these areas. Although there are clusters of high-level minority and low-income populations within one-half mile of the proposed pipeline, most of these clusters are widely dispersed and have low population densities. Oil and gas pipelines are common throughout the area, both within and outside industrial areas. The low-density nature of populations along the pipeline route reduces the potential for disproportionate impacts, particularly in the industrial and urban/suburban areas where there are greater numbers of existing exacerbated conditions as well as new projects, which could also worsen conditions. There appears to be no basis to expect that construction of an additional pipeline would impact more high-minority and low-income block groups than low- and medium minority and medium- and high-income block groups.

A large or very large accidental spill, and its associated effects on water quality, land use, and fishing could have a significant environmental justice impact if the spill occurred in a low-income block group. However, this impact can be mitigated to a level that is not significant with implementation of mitigation measures that would help ensure that low-income populations can react to a spill and its impacts in a comparable manner to other populations and that mitigation of impacts are implemented in a fair and equitable manner for all populations. Three mitigation measures are recommended.

The Existing Pipeline ROW Alternative would likely have greater impacts than the Proposed Pipeline because of the additional number of upper-third minority and lower-third income census block groups within its corridor. Under the No Project Alternative and with the increased tanker and truck traffic and spill potential, mitigation measures associated with the Proposed Project intended to alleviate existing burdens would not occur for communities along the associated transportation corridors.

5. Comparison of the Proposed Project and Alternatives

5.1 Introduction

In addition to mandating consideration of the No Project Alternative, the State CEQA Guidelines (section 15126.6) emphasize, in part, the selection of a reasonable range of technically feasible alternatives and adequate assessment of these alternatives to allow for a comparative analysis for consideration of a proposed project by decision-makers.

CEQA requires consideration of a range of alternatives to the project or project location that: (1) could feasibly attain most of the basic project objectives; and (2) would avoid or substantially lessen any of the significant impacts of the Proposed Project. An alternative cannot be eliminated simply because it is more costly or if it could impede the attainment of all project objectives to some degree. However, the State CEQA Guidelines declare that an EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote or speculative. CEQA requires that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

5.2 Comparison of Alternatives and Alternative Segments

Table ES-1 compares the impacts of the Existing Pipeline ROW Alternative and the No Project Alternative to the Proposed Project. Table ES-2 compares the impacts associated with the Cordelia Mitigation Segment (CMS) with those of that portion of the route of the Proposed Project the CMS is to replace.

Table ES-1. Comparison Matrix: Proposed Project and Alternatives

Issue Area and Impact	Impacts of the Proposed Project	Comparison with Existing Pipeline ROW Alternative ²	Comparison with No Project Alternative
Pipeline Safety			
S-1: Construction activities present hazards to the public and construction workers	Less than significant with mitigation	Similar	Less
S-2: A pipeline accident could result in injury or fatalities to nearby public.	Significant, unmitigable	Similar	Greater
S-3: Improper pipeline abandonment could cause contamination, landslides, or erosion.	Less than significant	Similar	Similar
Air Quality			
A-1: Emissions of equipment exhaust could substantially contribute to existing violations of ozone standards during the construction period.	Significant, unmitigable	Similar	Less
A-2: Emissions of airborne dust could substantially contribute to existing violations of PM ₁₀ standards during the construction period.	Significant, unmitigable	Similar	Less
A-3: Emissions of motor vehicle exhaust could substantially contribute to existing violations of ozone and PM ₁₀ standards during the construction period.	Less than significant with mitigation	Similar	Greater
A-4: Traffic disruptions during construction could cause traffic congestion on area roadways, causing localized violations of ambient air quality standards.	Less than significant	Similar	Less
A-5: In the event of a pipeline accident, petroleum products could be exposed to the atmosphere causing emissions of volatile organic compounds and adverse short-term health effects.	Less than significant	Similar	Greater
A-6: Normal operation of pipeline components would cause emissions of volatile organic compounds and other indirect emissions.	Less than significant	Similar	Greater
Biological Resources			
BB-1: Erosion of clean and/or contaminated soils exposed during trenching or from deposition of hazardous substances could cause habitat degradation to sensitive plant species or within wetlands.	Less than significant with mitigation	Greater	Less
BB-2: Construction could result in the loss of individuals or known habitats of sensitive plant species or associated habitats.	Less than significant with mitigation	Unknown ³	Less
BB-3: Upland vegetation removal during construction activities could result in temporary loss of vegetation, adversely impacting upland vegetation.	Less than significant with mitigation	Unknown	Less
BB-4: There would be direct permanent loss of vegetation due to construction of valves.	Less than significant with mitigation	Unknown	Less

² Impact comparisons use the following category choices: **Greater** (impacts greater than Proposed Project); **Less** (impacts less than Proposed Project); **Similar** (impacts similar to Proposed Project); and **Unknown** (impacts difficult to compare)

³ While the pipeline itself would be installed within the UPRR ROW, construction disturbance would also affect adjacent lands which have not been surveyed for wetlands or sensitive plants.

Table ES-1. Comparison Matrix: Proposed Project and Alternatives

Issue Area and Impact	Impacts of the Proposed Project	Comparison with Existing Pipeline ROW Alternative ²	Comparison with No Project Alternative
BB-5: Construction in wetlands would result in vegetation removal within the project ROW or disrupt the hydrology of the wetlands.	Less than significant with mitigation	Greater	Less
BB-6: Construction disturbance could provide an opportunity and seedbed for the invasion of weeds, adversely affecting special status plant species, upland vegetation, and/or wetlands.	Less than significant with mitigation	Similar	Less
BW-1: Construction could remove existing wildlife habitat.	Less than significant with mitigation	Less	Less
BW-2: The direct loss of wildlife could occur from construction activities and increased human activity.	Less than significant with mitigation	Similar	Less
BW-3: Construction and operation could cause habitat removal or disturbance of special status wildlife species.	Less than significant with mitigation	Similar	Less
BW-4: Human disturbance during project construction or maintenance could cause temporary displacement of some wildlife, avoidance of preferred habitat areas or reduced reproductive success.	Less than significant with mitigation	Similar	Less
BM-1: Pipeline construction could degrade aquatic habitat and temporarily disrupt fish movement.	Less than significant with mitigation	Similar	Less
B-1: Pipeline spills could degrade or alter habitat for wildlife, aquatic habitats and organisms, special status plants and their habitat, upland vegetation, and/or wetlands.	Significant, unmitigable	Similar	Greater
B-2: Cleanup after a pipeline accident could affect wetlands, special status plants and wildlife, and upland vegetation.	Significant, unmitigable	Similar	Greater
B-3: Overland travel during pipeline maintenance and repair could affect special status wildlife or plant species and upland vegetation or their habitats and/or to wetlands.	Less than significant with mitigation	Similar	Greater
B-4: Construction or operation and accident impacts on sensitive biological and water resources within Cordelia Marsh and Slough could affect areas of the marsh.	Less than significant with proposed Cordelia Mitigation Segment.	Similar	Greater
Cultural Resources			
Cul-1: Identified cultural resources within and adjacent to the project alignment may be damaged or destroyed by construction operations.	Less than significant with mitigation	Similar	Less
Cul-2: Cultural resources that are presently unknown may be affected by project construction.	Less than significant with mitigation	Less	Less
Cul-3: Project construction has the potential to expose Native American remains at both recorded and as yet unknown locations.	Less than significant with mitigation	Similar	Less
Environmental Contamination			
EC-1: Pipeline construction through contaminated sites could cause health hazards to construction workers and the public.	Less than significant with mitigation	Greater	Less
EC-2: Landfills near the alignment could result in encountering methane or other flammable or toxic gases during construction.	Less than significant with mitigation	Less	Less
EC-3: Construction could result in the release of natural gas from existing gas wells, causing an explosion or fire hazard and/or potential health hazards.	Less than significant with mitigation	Less	Less

Table ES-1. Comparison Matrix: Proposed Project and Alternatives

Issue Area and Impact	Impacts of the Proposed Project	Comparison with Existing Pipeline ROW Alternative ²	Comparison with No Project Alternative
EC-4: Transport and disposal of hazardous materials could release contaminants to the air.	Less than significant with mitigation	Greater	Similar
EC-5: Pipeline accidents could result in spills of refined petroleum products that would cause soil and potential groundwater contamination.	Less than significant with mitigation	Similar	Greater
EC-6: Spills of pigging waste could cause soil contamination at the pig receiver.	Less than significant with mitigation	Similar	Similar
Geology, Minerals, Paleontology			
G-1: Construction of the pipeline could impact unique geologic features or access to mineral resources and/or energy resources.	Less than significant	Similar	Less
G-2: Pipeline construction could expose and damage paleontological resources.	Less than significant with mitigation	Less	Less
G-3: Slope failures or downslope creep of unstable natural or man-made slopes along the pipeline could lead to substantial pipeline damage or failure.	Less than significant with mitigation	Less	Similar
G-4: There could be excavation failure where the proposed pipeline crosses beneath or adjacent to active railroad ROW.	Less than significant with mitigation	Greater	Less
G-5: Active fault crossings could result in pipeline rupture.	Significant, unmitigable	Similar	Greater
G-6: Strong earthquake-induced ground shaking could result in significant damage to above-ground structures and lead to failure of open trenches during construction.	Less than significant with mitigation	Similar	Less
G-7: Liquefaction could result in loss of ground bearing capacity and/or lateral spreading, both of which could result in damage to pipeline.	Less than significant with mitigation	Similar	Similar
G-8: A seiche could remove the cover and damage the pipeline.	Less than significant with mitigation	Similar	Similar
G-9: Problematic soils could impact pipeline operation, and pipeline construction and operation could impact soils.	Less than significant	Similar	Similar
Hydrology and Water Quality			
HS-1: Construction activities including ROW clearing can disturb stream sediments and leave exposed soil that can be washed into nearby waterways.	Less than significant with mitigation	Similar	Less
HS-2: Contaminants leaking from construction equipment or discharge of hydrostatic test or dust control water could degrade surface or groundwater quality.	Less than significant with mitigation	Similar	Less
HS-3: Surface water can be contaminated during directional drilling if drilling fluid is released.	Less than significant with mitigation	Similar	Less
HS-4: Streambed scour could potentially rupture the pipeline causing a release of petroleum products.	Less than significant with mitigation	Similar	Greater
HS-5: Contamination of surface water could result from accidental rupture of the pipeline during operation or maintenance.	Significant, unmitigable	Similar	Greater
HS-6: The proposed pipeline could indirectly cause an increased risk of flooding and erosion	Less than significant with mitigation	Similar	Similar
GW-1: Groundwater recharge rates in the vicinity of the pipeline construction ROW could be temporarily affected by the use of heavy construction equipment.	Less than significant	Greater	Less

Table ES-1. Comparison Matrix: Proposed Project and Alternatives

Issue Area and Impact	Impacts of the Proposed Project	Comparison with Existing Pipeline ROW Alternative ²	Comparison with No Project Alternative
GW-2: An accidental release of pollutants during construction activities could degrade groundwater quality.	Less than significant with mitigation	Greater	Less
GW-3: Trenching and other construction activities increase the risk of accidental damage to a well or supply lines from a well by heavy equipment.	Less than significant with mitigation	Less	Less
GW-4: Drinking water could be contaminated if product from a pipeline accident migrated to a well used for municipal or private drinking water purposes.	Significant, unmitigable	Similar	Greater
Land Use			
LU-1: Construction disturbances could create noise, dust, air emissions, odors, traffic congestion, limited parking, access detours, and utility disruptions.	Less than significant with mitigation	Greater	Less
LU-2: Construction impacts to agricultural land could result in loss of topsoil and/or farming income.	Less than significant with mitigation	Less	Less
LU-3: A pipeline accident could contaminate land and property or cause death or injury due to fire or explosion.	Significant, unmitigable	Similar	Greater
Noise			
N-1: Construction work would cause short-term noise.	Less than significant with mitigation	Similar	Less
N-2: Noise from equipment used to clean up a pipeline spill could exceed standards at nearby noise sensitive areas.	Less than significant	Similar	Greater
N-3: Noise from routine operational inspections and maintenance of the pipeline could exceed standards at nearby noise sensitive areas.	Less than significant	Similar	Greater
N-4: Noise from new equipment proposed for the Concord Station could exceeding 55 dBA at nearby residential areas.	Less than significant with mitigation	Similar	Less
Utilities and Service Systems			
US-1: Pipeline construction could accidentally damage existing utility lines.	Less than significant with mitigation	Less	Less
US-2: Demand for large quantities of water for dust suppression and hydrostatic testing during construction may burden the water supply of local water providers.	Less than significant with mitigation	Similar	Less
US-3: Project construction would generate wastes including construction materials, trench spoils, and general refuse that would need to be disposed of in local or regional facilities.	Less than significant	Similar	Less
US-4: A pipeline accident could create an adverse interaction with existing utilities, potentially resulting in a concurrent release of water or natural gas, or a fire.	Less than significant	Similar	Greater
US-5: Maintenance activities could accidentally damage one or more utilities sharing the pipeline corridor, resulting in short-term service disruption.	Less than significant	Similar	Greater
US-6: Pipeline operation would result in generation of small amounts of solid waste, and the demand for water and energy.	Less than significant	Similar	Similar
Traffic & Transportation			
T-1: The proposed pipeline would be installed within the public ROW in a number of roadways, causing traffic congestion and construction equipment safety hazards.	Less than significant with mitigation	Less	Less

Table ES-1. Comparison Matrix: Proposed Project and Alternatives

Issue Area and Impact	Impacts of the Proposed Project	Comparison with Existing Pipeline ROW Alternative ²	Comparison with No Project Alternative
T-2: Construction could temporarily block access to and parking for adjacent businesses, residences, and/or other property.	Less than significant with mitigation	Less	Less
T-3: Construction activities could block pedestrian access or established bicycle routes.	Less than significant with mitigation	Less	Less
T-4: Pipeline construction activities could block immediate access to emergency response traffic.	Less than significant with mitigation	Less	Less
T-5: Construction activities would generate additional traffic on roadways in the project area and use existing parking spaces.	Less than significant with mitigation	Similar	Less
T-6: Pipeline construction could damage roadways.	Less than significant with mitigation	Similar	Less
T-7: Construction activities could physically block bus routes resulting in the disruption of transit services.	Less than significant with mitigation	Less	Less
T-8: A rupture or leak of the proposed pipeline could result in the closure or restriction of use of a roadway.	Less than significant with mitigation	Similar	Greater
Recreational & Commercial Fisheries			
RCF-1: Pipeline construction across waterways could limit access to waterways for fishing.	Less than significant with mitigation	Similar	Less
RCF-2: Pipeline construction across waterways could disturb fisheries habitat.	Less than significant with mitigation	Similar	Less
RCF-3: Accidents during construction could contaminate fish habitat.	Less than significant with mitigation	Similar	Less
RCF-4: Accidents during operation could restrict fishing access and/or contaminate fish habitat and fishing gear.	Significant, unmitigable	Similar	Greater
RCF-5: Cumulative effects resulting in long-term degradation of fisheries habitat could occur.	Less than significant with mitigation	Similar	Greater

5.2.1 Proposed Project vs. The Cordelia Mitigation Segment

The Cordelia Segment is suggested as a modification of the Proposed Project route to avoid construction through the Cordelia Slough and marsh area and to follow existing roadways. Biological and water resource impacts would be significantly reduced with the Cordelia Reroute. Due to the high value placed by resource agencies on this habitat and its water resources, the reduction of long-term spill risk in this area is considered to be a significant benefit.

Table ES-2. Summary Comparison of Proposed Project Route vs. Cordelia Mitigation Segment

Issue Area	Proposed Route Segment	Cordelia Mitigation Segment
Pipeline Safety & Risk of Accidents	Less potential for accidents.	More potential for construction impacts associated with traffic collisions.
Air Quality	Shorter route has slightly fewer construction emissions.	More construction emissions.
Biological Resources	Construction in the Cordelia Slough area; spill impacts in highly sensitive habitat.	Construction in the Cordelia Slough area; spill impacts in highly sensitive habitat.
Cultural Resources	Similar potential for impacts.	Greater likelihood of affecting historic resources.
Environmental Contamination & Hazardous Materials	Less potential for encountering contamination.	Higher potential of encountering unanticipated soil and/or groundwater contamination.
Geology, Soils & Paleontology	Route traverses a landslide area.	Avoidance of a landslide area.
Hydrology & Water Quality	Construction would occur in the Cordelia Slough area; spill impacts in impaired waterbodies.	Construction would occur in the Cordelia Slough area; spill impacts in impaired waterbodies.
Land Use, Recreation, Agriculture	Similar potential for impacts.	Similar potential for impacts.
Noise	Similar potential for impacts.	Similar potential for impacts.
Public Services & Utilities	Slightly fewer utility conflicts likely.	Higher probability of utility conflicts during construction.
Transportation & Traffic	Minimal traffic impacts.	Short-term traffic impacts on Cordelia Rd.
Commercial Fisheries	Construction in Cordelia Slough area; spill impacts in fishing areas.	Construction in Cordelia Slough area; spill impacts in fishing areas.

5.2.2 Proposed Project vs. Existing Pipeline ROW Alternative

The Existing Pipeline ROW Alternative would install a new pipeline that follows the route of SFPP's existing Line Section 25 from Concord to West Sacramento. It would be nearly entirely within the UPRR ROW. The route would begin in Concord and travel northward across the Carquinez Strait. It would enter Solano County, traveling through Benicia and paralleling the UPRR for the entire route. This alternative route is approximately 60 miles long.

In addition, two reroutes are suggested for the Existing Pipeline ROW Alternative. Segment EP-1 is suggested to reduce biological resources impacts and Mitigation Segment EP-2 is suggested to reduce land use impacts through Davis. Segment EP-1 would replace the original segment of the Existing Pipeline ROW Alternative through the Suisun Marsh. Segment EP-2 has balancing benefits and impacts, but the reroute would avoid construction and potential spill impacts in congested central Davis.

5.2.3 Proposed Project vs. No Project Alternative

The No Project Alternative includes a scenario of actions that could be taken by both shippers (i.e., oil companies) and by SFPP (as the primary transporter of refined products in the region) about which destinations would have priority for receiving product via pipeline. SFPP would not be constructing a new pipeline under the No Project scenario, and it is assumed that no other new pipeline would be built since none are currently proposed. Therefore, this scenario is based primarily on anticipated modification of existing pipelines, and secondarily, on the use of trucks and trains to respond to increased demand.

5.3 Environmentally Superior Alternative

The CEQA Guidelines [Section 15126.6(d)] requires that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. The Guidelines [Section 15126.6(e)(2)] further state, in part, that “**If the environmentally superior alternative is the ‘no project’ alternative**, the EIR shall also identify an environmentally superior alternative among the other alternatives” [emphasis added].

Based on this EIR’s analyses of the project alternatives presented in Section C.3, it has been determined that the No Project Alternative would in itself result in both near and long-term hazards to the public’s health and safety. It is, consequently, not considered to be the environmentally superior alternative. When the No Project Alternative is not the environmentally superior alternative, the CEQA Guidelines do not require identification of an environmentally superior alternative from the remaining alternatives.

6. Impact Summary Table

Table ES-3 presents a summary of impacts and mitigation measures for the Proposed Project. In nearly all cases, recommended mitigation measures would apply equally to the Proposed Project and the Existing Pipeline ROW Alternative. This table is presented by issue area. Within each issue area each impact is described and classified, recommended mitigation is listed, and residual impact is stated. Significant and unmitigable impacts (identified as Class I in this document) are presented first, followed by impacts that are potentially significant but mitigable to less than significant levels if recommended mitigation is implemented. Lastly, impacts that are adverse but less than significant (Class III) are listed, as well as beneficial impacts (Class IV).

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class ^a	Mitigation Measure(s)	Residual Impact
Pipeline Safety & Risk of Accidents			
S-1: Construction activities present hazards to the public and construction workers	Class II	See below.	Less than significant
S-1.1: Construction activities could create traffic hazards.	Class II	T-1b: Prepare traffic control plans for local jurisdictions.	Less than significant
S-1.2: Construction activities can damage other substructures, causing contamination, injury or death.	Class II	S-1a: Minimize effect on other underground facilities.	Less than significant
S-1.3: Construction activities can cause fires, resulting in property damage, injury, or death.	Class II	S-1b: Minimize risk of fire.	Less than significant
S-2: A pipeline accident during operation could result in injury or fatalities to nearby public.	Class I	S-2a: Prepare a Supplemental Spill Response Plan with resource information specific to approved route. S-2b: Perform monthly leak detection tests. S-2c: Perform valve location review along entire route. S-2d: Prevent third party damage in most densely populated areas.	Significant
S-2.1: External corrosion can result in pipeline leaks or ruptures.	Class I	S-2e: Conduct pipeline inspections. S-2f: Ensure proper cathodic protection.	
S-2.2: Internal corrosion could cause a pipeline accident.	Class II	S-2e: Conduct pipeline inspections.	
S-2.3: Third party damage could cause a pipeline accident.	Class I	S-2g: Install pipeline markers.	
S-2.4: Pipeline operator error can result in pipeline accidents or reduced response capability.	Class III	None.	
S-2.5: Design flaws or incomplete/inadequate engineering can contribute to likelihood of a pipeline accident.	Class III	None.	
S-2.6: Malfunction of equipment can cause small pipeline releases.	Class III	None.	
S-3: Improper pipeline abandonment could cause contamination, landslides, or erosion.	Class II	S-3a: Implement proper pipeline abandonment procedures.	
Air Quality			
A-1: Emissions of equipment exhaust could substantially contribute to existing violations of ozone standards during the construction period.	Class I	A-1a: Control equipment emissions from on-site construction equipment.	Significant
A-2: Emissions of airborne dust could substantially contribute to existing violations of PM10 standards during the construction period.	Class II	A-2a: Control dust and particulate emissions by implementing the recommendations of the applicable Air Quality Management District.	Significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class^a	Mitigation Measure(s)	Residual Impact
A-3: Emissions of motor vehicle exhaust could substantially contribute to existing violations of ozone and PM10 standards during the construction period.	Class II	A-3a: Develop transportation management strategies for local jurisdictions.	Less than significant
A-4: Traffic disruptions during construction could cause traffic congestion on area roadways. Increased traffic congestion could cause localized violations of ambient air quality standards.	Class III	No mitigation measures	Less than significant
A-5: In the event of a pipeline accident, petroleum products could be exposed to the atmosphere causing emissions of volatile organic compounds and adverse short-term health effects.	Class III	No mitigation measures	Less than significant
A-6: Normal operation of pipeline components would cause emissions of volatile organic compounds and other indirect emissions. These emissions could contribute to existing violations of the ozone standards.	Class III	No mitigation measures	Less than significant
A-1: Cumulative effects of emissions of equipment exhaust could substantially contribute to existing violations of ozone standards during the construction period.	Class I	A-1a: Control equipment emissions from on-site construction equipment.	
Biological Resources			
BB-1: Erosion of clean and/or contaminated soils exposed during trenching or from deposition of hazardous substances could cause habitat degradation to sensitive plant species or within wetlands.	Class II	HS-1c: Implement erosion control procedures.	Less than significant
BB-2: Construction could result in the loss of individuals or known habitats of sensitive plant species or associated habitats.	Class II	BB-2a: Avoid rare plants during construction.	Less than significant
BB-3: Upland vegetation removal during construction activities could result in temporary loss of vegetation, adversely impacting upland vegetation.	Class II/III	BB-3a: Avoid, minimize, and compensate for impacts to trees, including those protected by local ordinances.	Less than significant
BB-4: There would be direct permanent loss of vegetation due to construction of valves.	Class III	None	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class^a	Mitigation Measure(s)	Residual Impact
BB-5: Construction in wetlands would result in vegetation removal within the project ROW or disrupt the hydrology of the wetlands.	Class II	BB-5a: Avoid, minimize, and/or compensate for damage and/or loss of wetland vegetation types. BB-5b: Prevent temporary and permanent hydrologic alteration to wetlands and associated sensitive vegetation from backfill activities. BB-5c: Minimize and compensate for impacts to riparian vegetation.	Less than significant
BB-6: Construction disturbance could provide an opportunity and seedbed for the invasion of weeds, adversely affecting special status plant species, upland vegetation, and/or wetlands.	Class II	BB-6a: Prevent invasion of invasive, non-native plant species into sensitive plant species habitats and vegetation types.	Less than significant
BW-1: Wildlife habitat removal from construction could remove existing habitat.	Class II	BW-1a: Conduct pre-construction surveys to identify sensitive resources. BW-1b: Establish buffer zones around sensitive resources. BW-1c: Conduct Worker Environmental Awareness Program training. BW-1d: Confine activity to identified ROW. BW-1e: Minimize disturbance at water crossings.	Less than significant
BW-2: The direct loss of wildlife could occur from construction activities and increased human activity.	Class II	BW-2a: Reduce direct mortality to wildlife. BW-2b: Employ approved biological monitors.	Less than significant
BW-3: Construction and operation could cause habitat removal or disturbance of special status wildlife species.	Class II	BW-3a: Protect special status wildlife. BW-3b: Protect special status bird species by limiting construction periods to outside the respective breeding season of the affected species. BW-3c: Protect raptor nests. BW-3d: Consult resource agencies to minimize impacts.	Less than significant
BW-4: Human disturbance during project construction or maintenance could cause temporary displacement of some wildlife, avoidance of preferred habitat areas or reduced reproductive success.	Class II	BW-1a, BW-1d, BW-c, BW-1e BW-3a to BW-3c	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class^a	Mitigation Measure(s)	Residual Impact
BM-1: Pipeline construction could degrade aquatic habitat and temporarily disrupt fish movement.	Class I/III	HS-1a, HS-1b, HS-1c, HS-1d: Reduce sedimentation in aquatic habitat. HS-1c: Implement erosion control procedures. HS-2a: Discharge hydrostatic test waters at appropriate waste facilities. HS-3a: Create contingency plan for unanticipated release of drilling fluids.	Less than significant
B-1: Pipeline spills could degrade or alter habitat for wildlife, aquatic habitats and organisms, special status plants and their habitat, upland vegetation, and/or wetlands.	Class I/II/III	B-1a: Implement pipeline spill clean up, containment, restoration, and prevention measures for biological resources.	Significant (large spills)
B-2: Cleanup after a pipeline accident could affect wetlands, special status plants and wildlife, and upland vegetation.	Class I/II	B-1a: Implement pipeline spill clean up, containment, restoration, and prevention measures for biological resources.	Significant (large spills)
B-3: Overland travel pipeline maintenance and repair could affect special status wildlife or plant species and upland vegetation or their habitats and/or to wetlands.	Class II	B-3a: Avoid, minimize, and compensate for pipeline operation and maintenance impacts to sensitive plant species and vegetation types.	Significant
B-4: Construction or operation and accident impacts on sensitive biological and water resources within Cordelia Marsh and Slough could affect areas of the marsh.	Class II	B-4a: Avoid the sensitive biological and water resources of the Cordelia Slough and Marsh by implementing the Cordelia Mitigation Segment.	Less than significant
Cultural Resources			
Cul-1: Identified cultural resources within and adjacent to the project alignment may be damaged or destroyed by construction operations.	Class II	Cul-1a: Avoid and monitor all archaeological sites. Cul-1b: The Cultural Resources Monitor shall review and approve any erosion control and revegetation procedures. Cul-1c: Conduct cultural resources awareness training.	Less than significant
Cul-2: Cultural resources that are presently unknown may be affected by project construction.	Class II	Cul-2a: Monitor archaeological sites and data recovery.	Less than significant
Cul-3: Project construction has the potential to expose Native American remains at both recorded and as yet unknown locations.	Class II	Cul-3a: Native American remains shall be treated in accordance with State law.	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class ^a	Mitigation Measure(s)	Residual Impact
Environmental Contamination and Hazardous Materials			
EC-1: Pipeline construction through contaminated sites could cause health hazards to construction workers and the public.	Class II	EC-1a: Review agency records for medium potential impact sites. EC-1b: Review agency records for high potential impact sites. EC-1c: Review exposed soil or groundwater for contamination.	Less than significant
EC-2: Landfills near the alignment could result in encountering methane or other flammable or toxic gases during construction.	Class II	EC-2a: Complete record searches to determine whether contamination from landfills could extend into the proposed trench.	Less than significant
EC-3: Construction could result in the release of natural gas from existing gas wells, causing an explosion or fire hazard and/or potential health hazards.	Class II	EC-3a: Determine locations of abandoned natural gas wells.	Less than significant
EC-4: Transport and disposal of hazardous materials could release contaminants to the air.	Class III	No mitigation measures	Less than significant
EC-5: Pipeline accidents could result in spills of refined petroleum products that would cause soil and potential groundwater contamination.	Class II	EC-5a: Conduct a site characterization after an accident.	Less than significant
EC-6: Spills of pigging waste could cause soil contamination at the pig receiver.	Class II	EC-5a: Conduct a site characterization after an accident.	Less than significant
Geology, Soils, and Paleontology			
G-1: Construction of the pipeline could impact unique geologic features or access to mineral resources and/or energy resources.	Class III	No mitigation measures	Less than significant
G-2: Pipeline construction could expose and damage paleontological resources.	Class II	G-2a: Prepare paleontological resource procedures.	Less than significant
G-3: Slope failures or downslope creep of unstable natural or man-made slopes along the pipeline could lead to substantial pipeline damage or failure.	Class II	G-3a: Perform geotechnical investigations at landslide crossings. G-3b: Relocate the valve at MP 15.17.	Less than significant
G-4: There could be excavation failure where the proposed pipeline crosses beneath or adjacent to active railroad ROW.	Class II	G-4a: Perform geotechnical investigations for construction below active railroads.	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class^a	Mitigation Measure(s)	Residual Impact
G-5: Active fault crossings could result in pipeline rupture.	Class I	G-5a: Conduct geotechnical studies for fault crossing design. G-5b: Incorporate earthquake response practice into pipeline operations and maintenance procedures.	Significant
G-6: Strong earthquake-induced ground shaking could result in significant damage to above-ground structures and lead to failure of open trenches during construction.	Class II	G-6a: Perform geotechnical investigations for excavation safety and trench design.	Less than significant
G-7: Liquefaction could result in loss of ground bearing capacity and/or lateral spreading, both of which could result in damage to pipeline.	Class II	G-7a: Reduce liquefaction hazard.	Less than significant
G-8: A seiche could remove the cover and damage the pipeline.	Class II	G-8a: Map and identify areas for protection from seiche inundation.	Less than significant
G-9: Problematic soils could impact pipeline operation, and pipeline construction and operation could impact soils.	Class III	No mitigation measures	Less than significant
Hydrology and Water Quality			
HS-1: Construction activities including ROW clearing can disturb stream sediments and leave exposed soil that can be washed into nearby waterways.	Class II	HS-1a: Define water crossing methods on construction plans. HS-1b: Open cut construction in streams shall be done using "in the dry" construction techniques. HS-1c: Implement erosion control procedures. HS-1d: If any water is present or expected to be present during construction in Pacheco Slough, cross Pacheco Slough using boring or directional drilling methods.	Less than significant
HS-2: Contaminants leaking from construction equipment or discharge of hydrostatic test or dust control water could degrade surface or groundwater quality.	Class II	HS-2a: Discharge hydrostatic test waters at appropriate waste facilities.	Less than significant
HS-3: Surface water can be contaminated during directional drilling if drilling fluid is released.	Class II	HS-3a: Create contingency plan for unanticipated release of drilling fluids.	Less than significant
HS-4: Streambed scour could potentially rupture the pipeline causing a release of petroleum products.	Class II	HS-4a: Adequately bury and protect the pipeline.	Less than significant
HS-5: Contamination of surface water could result from accidental rupture of the pipeline during operation or maintenance.	Class I	HS-5a: Create spill response procedures to protect waterways.	Significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class^a	Mitigation Measure(s)	Residual Impact
HS-6: The proposed pipeline could indirectly cause an increased risk of flooding and erosion	Class II	HS-6a: Protect floodplains.	Less than significant
GW-1: Groundwater recharge rates in the vicinity of the pipeline construction ROW could be temporarily affected by the use of heavy construction equipment.	Class III	No mitigation measures	Less than significant
GW-2: An accidental release of pollutants during construction activities could degrade groundwater quality.	Class II	HS-2a: Discharge hydrostatic test waters at appropriate waste facilities.	Less than significant
GW-3: Trenching and other construction activities increase the risk of accidental damage to a well or supply lines from a well by heavy equipment.	Class II	GW-4b: Locate the pipeline and all construction activity at least 200 feet from any existing water well.	Less than significant
GW-4: Drinking water could be contaminated if product from a pipeline accident migrated to a well used for municipal or private drinking water purposes.	Class I	GW-4a: Install thicker-wall pipeline or weight coating in strategic areas. GW-4b: Locate the pipeline and all construction activity at least 200 feet from any existing water well. GW-4c: Develop emergency response procedures for groundwater remediation.	Significant
Land Use			
LU-1: Construction disturbances could create noise, dust, air emissions, odors, traffic congestion, limited parking, access detours, and utility disruptions.	Class II	LU-1a: Provide construction notification to all residents, occupants, and landowners along the construction ROW and staging areas. LU-1b: Minimize impacts to schools and day care facilities by limiting construction work hours. LU-1c: Provide telephone access for receiving questions or complaints during construction and develop procedures for responding to callers. T-1a through T-7a A-1a, A-2a, and A-3a	Less than significant
LU-2: Construction impacts to agricultural land could result in loss of topsoil and/or farming income.	Class II	LU-2a: Preserve topsoil for replacement and restoration. LU-2b: Compensate landowners for the loss of income from cultivation of land taken out of production due to pipeline construction.	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class ^a	Mitigation Measure(s)	Residual Impact
LU-3: A pipeline accident could contaminate land and property or cause death or injury due to fire or explosion.	Class I	S-2a through S-2d	Significant
Noise			
N-1: Construction work would cause short-term noise.	Class II	N-1a: Restrict construction work hours.	Less than significant
N-2: Noise from equipment used to clean up a pipeline spill could exceed standards at nearby noise sensitive areas.	Class III	No mitigation measures	Less than significant
N-3: Noise from routine operational inspections and maintenance of the pipeline could exceed standards at nearby noise sensitive areas.	Class III	No mitigation measures	Less than significant
N-4: Noise from new equipment proposed for the Concord Station could exceed 55 dBA at nearby residential areas.	Class II	N-4a: Set noise limits at Concord Station.	Less than significant
Utilities and Service Systems			
US-1: Pipeline construction could accidentally damage existing utility lines.	Class I/III	US-1a: Protect underground utilities with project review by local jurisdictions.	Less than significant
US-2: Demand for large quantities of for dust suppression and hydrostatic testing during construction may burden the water supply of local water providers.	Class II	US-2a: Use reclaimed water.	Less than significant
US-3: Project construction would generate wastes including construction materials, trench spoils, and general refuse that would need to be disposed of in local or regional facilities.	Class III	No mitigation measures	Less than significant
US-4: A pipeline accident could create an adverse interaction with existing utilities could occur, potentially resulting in a concurrent release of water or natural gas, or a fire.	Class III	No mitigation measures	Less than significant
US-5: Maintenance activities could accidentally damage one or more utilities sharing the pipeline corridor, resulting in short-term service disruption.	Class III	No mitigation measures	Less than significant
US-6: Pipeline operation would result in generation of small amounts of solid waste, and the demand for water and energy.	Class III	No mitigation measures	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class^a	Mitigation Measure(s)	Residual Impact
Traffic and Transportation			
T-1: The proposed pipeline would be installed within the public ROW in a number of roadways, causing traffic congestion and construction equipment safety hazards.	Class II	<p>T-1a: Limit lane closure.</p> <p>T-1b: Prepare traffic control plans for local jurisdictions.</p> <p>T-1c: Ensure that all equipment remains within work areas designated by the traffic control devices and that it is properly loaded.</p>	Less than significant
T-2: Construction could temporarily block access to and for parking adjacent businesses, residences, and/or other property.	Class II	<p>T-2a: Minimize access concerns</p> <p>T-2b: Provide notification of roadway construction along construction ROW.</p>	Less than significant
T-3: Construction activities could block pedestrian access or established bicycle routes.	Class II	<p>T-3a: Provide alternative pedestrian/bicycle access routes.</p> <p>T-1b: Prepare traffic control plans for local jurisdictions.</p>	Less than significant
T-4: Pipeline construction activities could block immediate access to emergency response traffic.	Class II	T-4a: Coordinate with emergency service providers to avoid restricting movements of emergency vehicles.	Less than significant
T-5: Construction activities would generate additional traffic on roadways in the project area and use existing parking spaces.	Class II	<p>T-5a: Submit the location of proposed staging area(s) to appropriate local jurisdictions for review and approval.</p> <p>T-1b: Prepare traffic control plans for local jurisdictions.</p>	Less than significant
T-6: Pipeline construction could damage roadways.	Class II	T-6a: Restore roads to at least pre-construction conditions.	Less than significant
T-7: Construction activities could physically block bus routes resulting in the disruption of transit services.	Class II	T-7a: Coordinate with public transit to avoid disruption to transit operations in local jurisdictions.	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

Table ES-3. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class ^a	Mitigation Measure(s)	Residual Impact
T-8: A rupture or leak of the proposed pipeline could result in the closure or restriction of use of a roadway.	Class II	<p>T-1a: Limit lane closure.</p> <p>T-1b: Prepare traffic control plans for local jurisdictions.</p> <p>T-1c: Ensure that all equipment remains within work areas designated by the traffic control devices and that it is properly loaded.</p> <p>T-2a: Minimize access concerns</p> <p>T-2b: Notify of roadway construction along construction ROW.</p> <p>T-3a: Provide alternative pedestrian/bicycle access routes.</p> <p>T-4a: Coordinate with emergency service providers to avoid restricting movements of emergency vehicles.</p> <p>T-6a: Restore roads to at least pre-construction conditions.</p> <p>T-7a: Coordinate with public transit to avoid disruption to transit operations in local jurisdictions.</p>	Less than significant
Commercial Fisheries			
RCF-1: Pipeline construction across waterways could limit access to waterways for fishing.	Class II	RCF-1a: Post construction notices and schedules at all fishable pipeline water crossings.	Less than significant
RCF-2: Pipeline construction across waterways could disturb fisheries habitat.	Class II	<p>BW-1a through BW-1e</p> <p>EC-1a through EC-1c, and EC-3a</p> <p>HS-1a through HS-1c, HS-4a, and HS-6a</p>	Less than significant
RCF-3: Accidents during construction could contaminate fish habitat.	Class II	RCF-3a: Develop debris disposal procedures.	Less than significant
RCF-4: Accidents during operation could restrict fishing access and/or contaminate fish habitat and fishing gear.	Class I	RCF-4a: Provide spill notification at accident sites and nearby or affected marinas, launch ramps, and fishing access points.	Significant
RCF-5: Cumulative effects resulting in long-term degradation of fisheries habitat could occur.	Class III	No mitigation measures	Less than significant
Environmental Justice			
EJ-1: Disproportionate Impacts Resulting from Accidental Spills	N/A	No mitigation measures	Less than significant
EJ-2: Disproportionate impacts could result from accidental spills on the existing pipeline.	N/A	<p>EJ-2a: Spill containment and response</p> <p>EJ-2b: Equitably implement mitigation measures.</p> <p>EJ-3: Equitable application of mitigation measures</p>	Less than significant
EJ-3: The normal operation of the pipeline could disproportionately affect high-minority or low-income populations.	N/A	No mitigation measures	Less than significant

^a Impact Classes: Class I (significant, unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)